NORTHERN RIVER OTTER MANAGEMENT PLAN

UTAH

DWR Publication 04-30

Prepared by:
Brian Maxfield
Teresa Bonzo
Craig McLaughlin
Kevin Bunnell

Utah Division of Wildlife Resources
1594 West North Temple
Salt Lake City, Utah 84114

Approved by the Utah Wildlife Board January 4, 2005

TABLE OF CONTENTS

INTRODUCTION

The purpose of the Utah River Otter Management Plan is to provide direction for management of northern river otter (*Lontra canadensis*) in Utah and to expand the current distribution to its historic range. This purpose is in accordance with the mission statement of the Utah Division of Wildlife Resources:

> The mission of the Division of Wildlife Resources is to assure the future of protected wildlife for its intrinsic, scientific, educational and recreational values through protection, propagation, management, conservation and distribution throughout the State of Utah.

The Utah River Otter Management Plan will direct river otter management statewide for a period of five years (2005-2009). During 2009, this document will be reviewed, management progress will be evaluated and an updated management plan will be written and implemented.

BACKGROUND

Life History

Northern river otters are the most aquatic member of the Family Mustelidae, with webbed feet, streamlined body and a heavily muscled tail they are well suited for swimming. Adults weigh 6-15kg (13–33 lbs.) and range from 102-152 cm (40-60 in.) in length. Their coat can vary from a glossy black to a light brown and consists of sleek, short, dense fur. Otters have highly sensitive, long whiskers that aide in finding and capturing prey. River otters are carnivorous and will consume fish, amphibians, crustaceans, small birds and mammals.

Most otters reach sexual maturity at two years of age. Breeding occurs in late winter or early spring but, as a result of delayed implantation, gestation may last from nine to thirteen months. In the spring, pregnant females search for a den where they will give birth. River otters do not excavate their own dens, but rather use abandoned beaver bank dens or lodges, natural cavities or other holes made by burrowing animals. Usually two to four pups are born and remain in the den for about 60 days. Young are self-sufficient by five months of age, but typically remain with their mother up to one year or just prior to the birth of a new liter.

Otters remain active throughout the winter, feeding under frozen waters and coming up for air in gaps in the ice. They are highly mobile animals and may move many miles in search of prey and open waters. During periods of severe weather, otters will seek protection from the elements in dens, log jams, under tree roots or in other areas.

Distribution and Abundance

Northern river otters have never been abundant in Utah (Bich 1988). Between 1540 and 1872, only one expedition reported otters in the State. In 1826, Peter Skeene Ogden reported that three otters were trapped from the Raft River and in Box Elder County, and in 1829, six otters were trapped from the Bear River and Clarkston Creek in Cache County (Rawley 1982). Sporadic sightings of river otters continued to be reported throughout the first half of the twentieth century. Berryman (1949) believed that otters were probably present in the late 1940s on the Raft and Colorado Rivers. The Utah Division of Wildlife Resources removed three otters from the Raft River in 1953 (Bich 1988). Durrant (1952) considered river otters to be distributed throughout the Colorado

River drainage, and the Wasatch, Uinta, and Raft River Mountains in Utah. A river otter was captured in the late 1960s from the Price River near Scofield Reservoir (Bich 1988). Bates (1988) compiled 58 "positive" (reliably documented) otter sightings in Utah from 1978 to 1988. These sightings occurred throughout Utah and included the following drainages: Bear River, Colorado River, Green River, Provo River, Raft River, Sevier River and Weber River,. Bich (1988) reported 46 positive otter sightings made in Utah from 1964-1988. In addition, Bich (1988) conducted streamside searches totaling of 844.4 km in northern Utah during which he found otter sign on 11 stream sections including, East Canyon Creek, Goose Creek and the Raft and Weber rivers.

Legal Status

In 1899, the Utah State Fish and Game Commission classified the otter as a rare species and the state legislature protected them from harvest in the same year (Rawley 1982). There has been no legal harvest of river otters in the state of Utah since this time. In 1988, the Utah Division of Wildlife Resources designated the northern river otter as a State sensitive species because of low population levels and potential threats to existing habitats. In December 2003, the Utah Wildlife Board approved an updated sensitive species list for Utah and included the northern river otter as a Tier III species.

Management Actions

Beginning in 1989, the Utah Division of Wildlife Resources (Division) began a river otter reintroduction effort along the Green River in eastern Utah. From 1989-1992, the Division released 67 otters along the Green River (Table 1; Figure 1). Since this

reintroduction effort, river otters have increased their distribution throughout northeastern Utah, spreading into tributaries of the Green River. From 2002 to 2004, fifteen otters have been trapped from nuisance situations and released in northeastern Utah along tributaries of the Green River (Table 1; Figure 1).

River otter populations in eastern Utah may have also benefited from restoration efforts by the Colorado Division of Wildlife. Beginning in the 1970s, Colorado released otters in rivers that bisected the Colorado-Utah border. Otters have presumably moved into Utah from these releases, which occurred on the Colorado River, Dolores River and a tributary of the San Juan River.

Year	**Total Released**	**Release Location**	**Origin**
1989	9	Red Creek (jct. with Green River)	5 Nevada, 4 Alaska
1990	14	Little Hole (along Green River)	14 Alaska
1991	32	11 Island Park (Dinosaur NM) 6 Rainbow Park (Dinosaur NM) 9 Ouray NWR 6 Pariette Wetlands	32 Alaska
1992	12	2 Flaming Gorge Reservoir 10 Sand Wash (along Green River)	12 Alaska
2002	4	Strawberry River	Jone's Hole Hatchery
2003	7	Duchesne River Rock Creek	Jone's Hole Hatchery Whiterocks Hatchery
2004	3	Duchesne River	Red Canyon
Total	81		

Table 1. Summary of River Otter Reintroduction in Utah 1989-2004.

In 2002, four river otters that were causing fish mortality at the United States Fish and Wildlife Servive fish hatchery at Jone's Hole were captured and relocated to the Strawberry River (Figure 1). All four otters (2 males, 2 females) were released near an

area where otters were previously documented. In 2003, a total of eight otters were captured at fish hatcheries. Seven otters (4 females, 3 males) were captured at the Jone's Hole hatchery and one otter (female) was captured at the Division's Whiterock's fish hatchery. Six of the eight otters were released along the North Fork of the Duchesne River near areas where otters had been previously documented. One otter was released along Rock Creek. An adult female otter died while in the trap at Jone's Hole. A necropsy revealed the otter was in poor health prior to capture with four broken canines and no subcutaneous fat deposits. In 2004, three otters were captured at Red Canyon. All three otters (2 females, 1 male) were released on the North Fork of the Duchesne River at the 2003 release site.

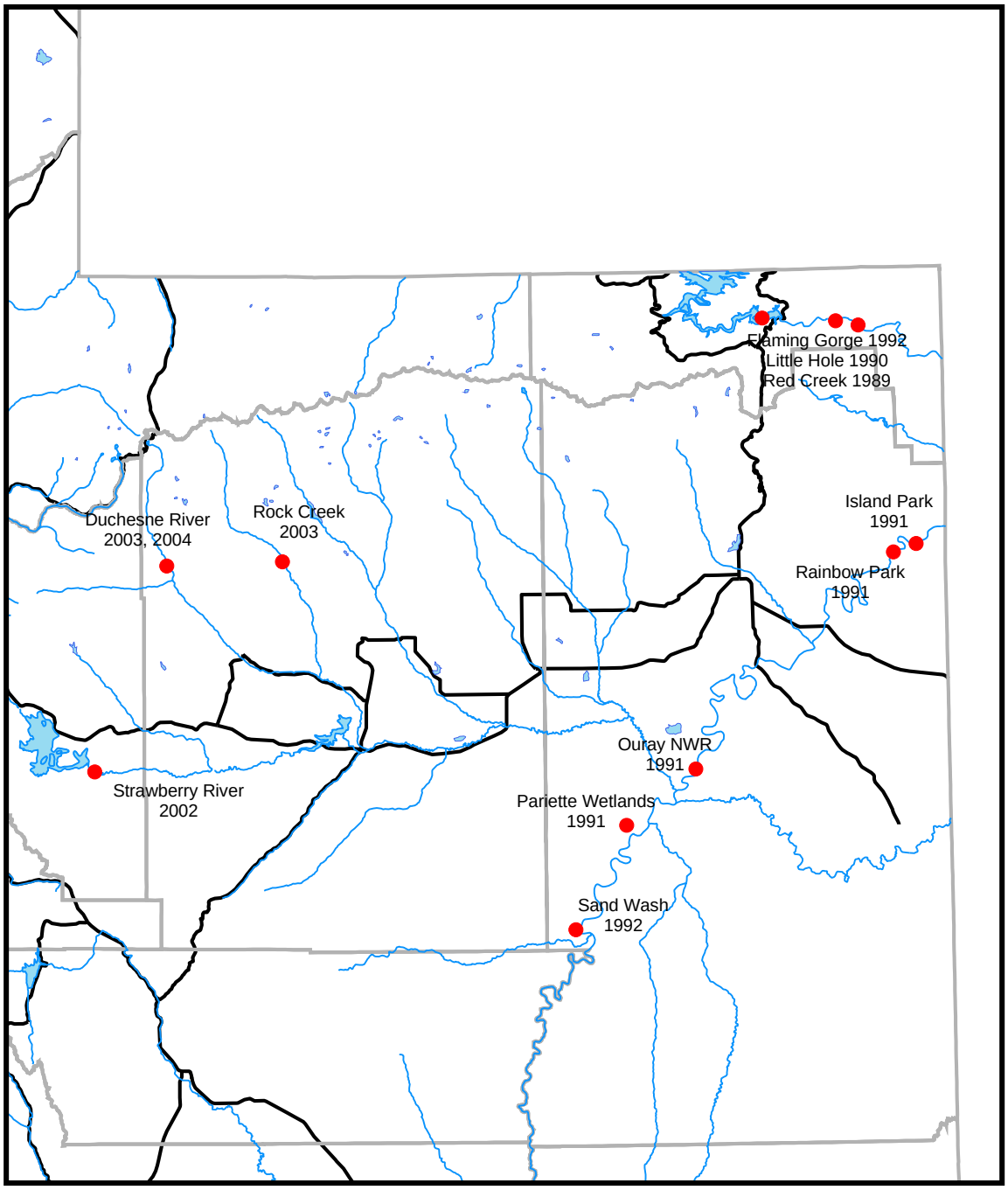

Figure 1. Otter release sites in northeastern Utah, 1989-2004.

ASSESSMENT

Population Size/Distribution

River otters have never been abundant in Utah (Bich 1988). Very few otter sightings have been reported since the first expeditions and settlers entered the State (Rawley 1982). By 1899, the river otter was considered to be rare and was protected for legal harvest. Population levels appear to have remained very low throughout the 1900s until the Utah Division of Wildlife Resources began a reintroduction effort in 1989. In addition, several releases in Colorado on rivers that flow through Utah may have provided dispersing otters that settled within Utah.

The size of Utah's river otter population is unknown, as no population estimates exist. Otters are secretive animals that occur in low densities, and therefore accurate population estimates or even reliable indices of otter population size are difficult to obtain. Sighting reports have been compiled in a database stored at the UDWR Northeastern Regional Office to document the distribution of river otters within the State. Recently, river otters have been reported throughout the Uintah Basin in northeastern Utah. In southeastern Utah, river otters have been reported recently along the Colorado and San Juan Rivers and in Lake Powell.

This increase in distribution of sighting reports suggests that the river otter population may be increasing in numbers in eastern Utah. However, very few sightings have been documented recently in western Utah, suggesting few, if any otters are distributed throughout the waterways of that region.

Habitat

River otters are able to adapt to a wide variety of aquatic habitats, including coastal regions (Toweill and Tabor 1982, Foy 1984) and inland river systems (Toweill and Tabor 1982). Melquist and Hornocker (1983) discussed availability of food and shelter, stable water supplies, human activity and individual otter preference as factors influencing habitat use and selection.

Many of the river drainages in Utah that historically supported populations of river otter have been severely altered. Degraded riparian vegetation and agricultural and urban encroachment negatively impacted water levels and water quality (Bich 1988). As a result, populations of fishes, arthropods and mollusks, that form otters' prey base were reduced or totally removed, reducing the ability of these drainages to support otters.

In recent decades, habitat conditions have improved along many of Utah's waterways as a result of improved riparian habitat management. However, heavy demand for irrigation water, and encroachment of residential and industrial development along the heavily populated Wasatch Front in northcentral Utah continue to reduce the capacity of waterways to support river otters, and urbanization is increasing (Bich 1988). However, a suitable prey base for otters is now found in most perennial waters in Utah as a result of the Utah Division of Wildlife Resources efforts to provide recreational fishing opportunities to the public. These improvements in habitat conditions have allowed for reintroduction efforts and the increase in distribution and abundance of river otters.

Use

Historically, very little use of river otters has been documented, probably because they were so scarce in the State. Current trapping pressure on river otters in Utah is purely accidental, as otter trapping has been prohibited for over a century but 2-3 otters are trapped each year in northeastern Utah (UDWR, unpublished data). Specific restrictions on trapping equipment and methods have been implemented along the Green River to reduce the incidental take by trappers that are targeting other aquatic furbearers.

River otters provide an important non-consumptive use along the Green River corridor in northeastern Utah. Fisherman and wildlife enthusiasts enjoy observing river otters along the Green River and on Flaming Gorge Reservoir.

Relationship with other wildlife

The river otter is a specialist, feeding primarily on fish (Melquist et al. 1981). However, it also consumes other types of aquatic prey such as mammals, birds, crayfish and insects (Findley et al. 1992). Ryder (1954) hypothesized that otter feed on fish in proportion to their abundance and in inverse proportions to swimming speed. Otter can be considered opportunistic predators on a variety of aquatic prey. Slow swimming fish and those that are easily detected are consumed first and injured fish are primary targets (Findley et al. 1992).

River otters in the Green River were found to feed primarily on carp (35.6%) and trout (22.4%) (Findley et al. 1992). However, they also preyed upon other fish species as well

as crayfish and muskrats (Findley et al. 1992). Observations of river otter in Flaming Gorge Reservoir suggest that otters there consume primarily crayfish during the summer months and switch to fish in the fall and winter (Roger Schneiderven, UDWR Biologist, pers. comm.).

River otters have few predators while they are in the water. However, coyotes, bobcats, cougar, and wolves prey upon otters when they are on dry ground (Melquist and Hornocher 1983).

MANAGEMENT ISSUES

Public Issues

- Effect of reintroduced river otters on sport fisheries.
- Desire of Utah trappers to trap otters and the effects of trapping on river otter populations.
- Viewing/watchable wildlife opportunities.
- Lack of public knowledge about river otter biology and management in Utah.

Biological/Management Issues

- Proper assessment of potential release sites.
- Effect of reintroduced river otters on sport fisheries.
- Effects of trapping on river otter populations.
- Effect of river otters on threatened, endangered, and sensitive fish species.
- Viability of small populations.
- Effect of reintroduction on any remaining populations of southwestern subspecies of river otter, *Lontra canadensis Sonora.*

- Connectivity of populations of river otter in separate drainages throughout Utah.
- Metapopulation management of otters.
- Management of otter population without reliable population estimates.
- Coordination and cooperation needed with Colorado to manage otter populations along the Colorado, Green, and San Juan rivers.
- Habitat quality and quantity.
- Fish depredation by otters at fish hatcheries and private fish ponds.
- Funding limitations.

MANAGEMENT OBJECTIVES and STRATEGIES

Objective A: Maintain current river otter distribution and populations in northeastern Utah along the Green River corridor, including Flaming Gorge Reservoir.

Strategies:

1. Monitor otter distribution along the Green River using established monitoring protocol (Appendix B).
2. Maintain a statewide database of river otter sightings reported by the public and agency personnel. Emphasis will be placed on sightings of adult females with young.
3. Limit accidental trapping mortality by trappers along the Green River corridor.

4. Limit the number of river otter captured along the Green River corridor each year in order to maintain viability of the donor population. The following is a prioritized list of otter capture sites along the Green River corridor:
    - Private fish ponds: Remove nuisance otters.
    - Fish hatcheries: Remove nuisance otters.
    - Sheep Creek inlet on Flaming Gorge Reservoir.
    - Brown's Park Wildlife Management Area.
    - Green River - Flaming Gorge Reservoir to Brown's Park (Utah/Colorado stateline).

Objective B: Expand the distribution of river otter populations throughout the Green River watershed in northeastern Utah.

Strategies:

1. Reduce accidental trapping mortality along the tributaries of the Green River.
2. Release river otters within the Green River watershed along tributaries situated >50 km from the Green River.
3. Survey selected sections of the following waterways on an annual basis to document the presence of river otters.
    - Duchesne River
    - Strawberry River
    - Currant Creek

- Rock Creek
- Lake Fork River
- Yellowstone River
- Uinta River
- Whiterocks River

Objective C: Establish two new populations of river otters in two separate drainages within five years.

Strategies:

1. Create a priority list of release sites throughout Utah. The Escalante River, located within the Grand Staircase – Escalante National Monument, will be the primary release site for the next five years.
2. Capture up to 10 otters/year from the Green River corridor for release at proposed release sites. Use established capture protocol (Appendix A).
3. Identify and prioritize other potential release sites (other identified sites will be added to this plan as an appendix following RAC and Board approval).
4. Monitor reintroduction sites yearly while releases are taking place and then every three years (Monitoring Protocol, Appendix B).

Objective D: Reduce incidental trapping of river otter in Utah.

Strategies:

1. Make uniform trapping regulations along waterways where river otter protection is a management issue. Examples of trap regulations that may protect otters include: no trapping of tributaries within 0.5 miles of river ; no trapping within 100 yds of either side of river; use of leg-hold traps only within 0.5 miles of river; required use of modified conibear traps within 0.5 miles of river.
2. Educate trappers on methods to reduce river otter trap mortality.
3. Encourage the use of modified conibear body gripping traps along rivers where river otter occur. Conibear traps can be modified by replacing the standard V-trigger assembly with a top side-parallel trigger (Figure 2).

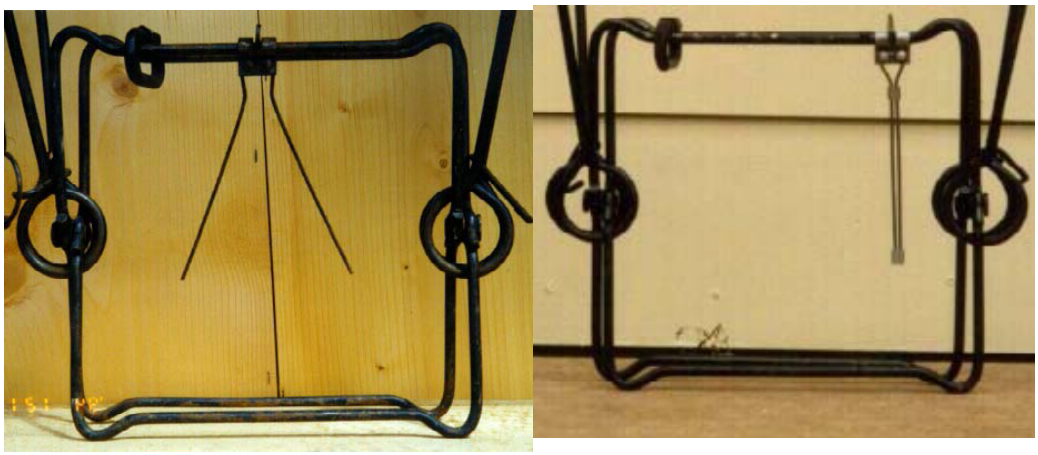

Figure 2. Standard V-trigger conibear trap and modified conibear trap.

Objective E: Evaluate the feasibility of allowing a limited amount of harvest by trappers in the future as populations become more established and widespread in the State

Strategies

1. Use the transplants (removal of otters) to simulate what impacts trapper harvest may have on the source population.
2. Evaluate the impacts of otter removal from the source population through the monitoring protocol (Appendix B).
3. Use the data gathered to evaluate the feasibility and appropriate level of future harvest.

Objective F: Increase public awareness and interest in river otters in Utah.

Strategies:

1. Produce and distribute an informational brochure about river otters in Utah.
2. Encourage media coverage of river otter reintroduction efforts in Utah.
3. Write an article in the Wildlife Review about river otter reintroduction efforts.

PRODUCTS

Monitoring Survey Data

Data collected while conducting regular monitoring surveys will be compiled and analyzed in the regions. A copy of the data should be sent to the mammal program coordinator in the Salt Lake office and a copy will be kept in the regional files.

Annual Reports

At the end of each calendar year an annual report will be written by the mammals program coordinator or his designee summarizing the past years management activities. Annual reports will be completed and distributed to relevant federal agencies and public groups by January 31 of each year. This time period will allow for surveys to be conducted in spring and/or fall and still leave adequate time to summarize the data before the report is due. Topics addressed in the annual report should include the following:

1. Summary of otter captures and releases.
    - Capture locations and release sites.
    - Age/sex of captured otters.
2. Summary of monitoring surveys.
    - Location where monitoring surveys were conducted.
    - Location and type of otter sign found during surveys.
3. Summary of accidental trapping mortality.
    - Location of trapping mortality.
    - Age/sex of otter killed.
4. Summary of river otter observations collected in the past year.

- Location of all otter observations reported during the year.
- Number of females with young observed.
- Detail new locations that may indicate expansion of otter distribution.

Final Report

In addition to the annual reports, at the end of the 5-year period covered by this management plan a final report is also required. Topics addressed in the final report should be similar to the annual reports but should summarize the entire management period. In addition, the status and distribution of river otters at the end of the period covered by the management plan should be discussed. This report will be written under the supervision of the mammals program coordinator and distributed by June 30th of the final year of the plan.

Literature Cited

Bates, B. 1988. Reintroduction of river otter in Utah. Utah Division of Wildlife Resources, Unpubl. Report.

Berryman, J. H. 1949. Facts of interest about Utah mammals. Utah Fish and Game Bull. 7(1):6-8.

Bich, J. P. 1988. The feasibility of river otter reintroductions in northern Utah. M. S. Thesis. Utah State University, Logan. 67pp.

Durrant, S.D. 1952. Mammals of Utah. University of Kansas Press, Lawrence. 549pp.

Findley, W. R. The reintroduction of river otter to the Green River, Utah: Progress Report III. Brigham Young University.

Foy, M. K. 1984. Seasonal movement, home range, and habitat use of river otter in Southeastern Texas. M.S. Thesis, Texas A&M University.

Melguist, W. E, J. S. Whitman, and M. G. Hornocker. 1981. Resource partitioning and coexistence of sympatric mink and river otter populations. Worldwide Furbearer Conf. 1:187-220.

Melquist, W. E., and Hornocker, M. G. 1983. Ecology of river otter in West Central Idaho. Wildlife Monographs. 83. The Wildlife Society, Inc. 60pp.

Rawley, E. V. 1982. Species plans for Utah's furbearer and game mammals recourses. Utah Division of Wildlife Resources Publication. No. 82-9. 137pp.

Ryder, R. A. 1954. Fish predation by the otter in Michigan. J. Wildl. Manage. 19(4):497-498.

Toweill, D. E., and J. E. Tabor. 1982. The northern river otter. Pages 688-703 in J. A. Chapman and G.A. Feldhamer, eds. Wild mammals of North America: biology, management, and economics. John Hopkins University Press, Baltimore, MD.

Appendix A: Northern River Otter Capture Protocol

This protocol is provided to ensure the safety of the captured river otters as well as the safety of personnel. River otters are extremely strong animals and will vigorously attempt to bite and claw personnel after capture. Every caution should be taken to protect personnel from injury and ensure the safety of the otters that are captured.

Traps

River otters should be trapped using live-capture traps. Havahart 1081 (16" X 16" X 42") traps have been used successfully to trap otters in Utah. However, any live trap with similar dimensions should also work. Traps need to be staked to the ground to prevent the captured otter from rolling the trap.

The trap should be placed near areas frequented by river otters. Latrine sites, slides, and feeding areas are examples of areas frequented by otters. Place traps in a position that allows easy access by the otter. Otter are generally curious animals and will often enter traps to investigate as they move about. Use of an otter scent may provide additional stimulus to attract otter to the trap and will also mask any human scent left on the trap. Bait (whole or cut fish) may also be used but should be replaced often because river otter will not eat putrefied bait. Traps can be covered with vegetation to obscure them from people.

Traps should be checked daily, preferably in the early morning to reduce potential injury and stress to the animal. The otter should be transferred to a transport tube as soon as possible.

Foot-hold traps may also be used to capture otters in areas where the use of a live-trap is not possible. However, this should be the last option pursued because the trapped otter could incur soft tissue and/or bone damage from the traps. Modified No. 1 foot-hold traps have been used successfully in other states to capture otters for reintroduction purposes. Modifications required to make the traps usable to trap otter are the addition of 2-3 swivels along the length of the chain and flipping the jaws of the trap to create a space between the jaws when the trap closes – or use of offset or padded jaw traps.

Processing

Captured otters should be ear-tagged before they are placed in the transport box. An otter "chute" will allow personnel to handle the otters in a manner that will allow ear tags to be attached. One ear tag should be placed in each ear. The tag number, sex of the otter, approximate age (juvenile or adult), and capture location of each otter should be recorded. If possible, weight should also be recorded. After processing, otters should be immediately placed into the transport boxes and stored in a temperature controlled, quiet location.

Quarantine/Transport

Otters will be held for a period of at least 48 hours. This quarantine period will allow the otter to expel any disease (whirling disease) or invasive species (New Zealand Zebra Mussel) from its digestive system. Otters should be provided fresh fish (known disease free source) and water during the quarantine period.

After the quarantine period, the otters should be transported in a timely manner to the release site. Transport tubes should be used while transporting the otters. The transport tubes are well ventilated and are dark inside and will allow the otter to calm down. Only one otter should be placed in each box during transport. Water should be provided for the otter during transport.

Release

Otters should be released near the shoreline of the river or lake. Otters can be released one at a time if there is more than one otter. All the otters should be released at the same site throughout the reintroduction period.

Suggested Equipment List

- Traps
- Wire cutters
- Pliers (needle nose or fencing pliers)
- Stakes
- Wire
- Leather gloves
- Otter lure
- Ear tags
- First aid kit

Appendix B: Monitoring protocol for northern river otters in Utah

This monitoring protocol is provided to ensure consistent monitoring of river otters throughout Utah. This method has been utilized in numerous states (Arkansas, New York, Pennsylvania) to monitor growing populations of river otters and determine the success of river otter reintroductions.

Sign Surveys

River otters are relatively secretive and difficult to observe. Consequently, a variety of techniques have been used to identify presence of otters. Field surveys to determine the presence of otter sign (scats, latrine sites) have been used frequently. A field sign survey consists of visually searching for otter sign while walking the shorelines of waterways. This sign surveys are a good method for indicating the presence of otters but are not yet a reliable method of predicting changes in otter population densities.

Methods

Timing

River otter sign surveys should be conducted during the fall (September – November) or spring (March – April). Research has shown river otters have seasonal differences in scent marking. The increase in scent marking in the fall period coincides with the dispersal of young from the female and natal home range. The increase in scent marking in the spring coincides with the breeding season of otters.

Site Selection

Stream sections should be selected for sign surveys based on known otter occupancy or presence of suitable habitat. Latrine sites are often associated with beaver activity, points of land, presence of conifers, and shorelines without dense shrub cover. Sections of waterways should be surveyed in a short period of time (1 week). Sections should be as large as logistically possible to account for the large home ranges of river otters.

Stream sections that are being actively trapped for relocation purposes should be surveyed annually. Also, stream sections that are part of a relocation site should be surveyed annually to determine the success of the reintroduction effort and document use areas. Other streams sections should be rotated on a three-year rotation to continue to document the use of these areas by otters.

Each latrine site should be marked with a GPS and general habitat features should be recorded. This data should be stored in a database to track otter presence.